

ABSTRACT

The invention relates to the synthesis of  
5 aspartame involving enzymatic deformylation of an *N*-  
formyl- $\alpha$ -L-aspartyl-L-phenylalanine compound by  
treatment with an enzyme having formylmethionyl peptide  
deformylase activity and having as a co-factor group 5  
to 11 bivalent metal ions. The invention also relates  
10 to selective preparation and recovery of aspartame from  
a mixture of *N*-formyl- $\alpha$ - and  $\beta$ -L-aspartyl-L-  
phenylalanine compounds by treatment with such enzyme.  
And finally, the invention relates to one-pot enzymatic  
synthesis of aspartame from *N*-formyl-L-aspartic acid  
15 and L- or D,L-phenylalanine methyl ester involving an  
enzymatic deformylation reaction simultaneously with an  
enzymatic coupling reaction, as well as to one-pot di-  
or oligopeptide synthesis by simultaneous enzymatic  
coupling and deformylation reactions in general.